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ABSTRACT

This publication reports on a conference, the purpose of which was to train elementary school curriculum specialists in the design and preparation of a curriculum using behavioral objectives. These objectives specify the behavior a student is expected to exhibit as a result of having learned certain material. The success of this instructional innovation depends on the ability of the curriculum developer to write appropriate objectives. Included in the document are a list of participants, a conference schedule, some samples of behavioral objectives, and a selection of evaluative comments by conference participants. (RA)

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TRAINING ELEMENTARY SCHOOL CURRICULUM SPECIALISTS IN THE DEVELOPMENT OF INSTRUCTIONAL OBJECTIVES IN BEHAVIORAL TERMS

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TRAINING ELEMENTARY SCHOOL CURRICULUM SPECIALISTS IN THE DEVELOPMENT OF INSTRUCTIONAL OBJECTIVES IN BEHAVIORAL TERMS

General Information

This project was funded by the Bureau of Research, Office of Education, U. S. Department of Health, Education, and Welfare, as Grant No. OEG-0-8-988-058 (010). The grant was awarded to Indiana University, in the amount of $3,045.00.

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Introduction

It has been said that the question of clearly defined purposes of education is particularly difficult in a complex democratic society. It may be for this cause that the curriculum planner in public education so often experiences an uneasy sense of lack of direction and consistency in the programs he designs. It may be for this cause that statements of objectives lie buried in district policy manuals and in textbook appendices, neither read nor thought about. It may be for this cause that teachers fret over the feeling that, "I know why I'm doing this--I just can't express it!"

Curriculum change is, at present, a major concern of elementary school educators. Categorizing instruction for the moment as consisting of objectives, organization, materials and methods, and evaluation, it may be stated that two of these categories, namely, organization and materials and methods, are receiving the greater share of attention, commercially and professionally. 'Plugging in' at random a new organizational scheme or a visually attractive, commercially prepared set of materials may hardly be considered a sophisticated approach to curriculum change, yet much of the present activity is confined to these areas.

The development of educational objectives, consistently a neglected area, has become an even more critical problem in light of the current penchant toward curriculum change. Recognition of this problem has led thoughtful educators to resist innovation for innovation's sake, and to seek first to reassess their beliefs and values, then to review and reconstruct instructional objectives before settling on innovative organizational patterns or curriculum procedures.

This project, funded under the Educational Research Training Program of the U. S. Office of Education, provided curriculum specialists and administrators in school systems in Southeastern Indiana with training in the theory and development of instructional objectives in behavioral terms.

Outcomes expected were specified as follows:

1. To understand the place of instructional objectives in the theoretical structure of curriculum development, and their bearing on other portions of that structure.

2. To understand the spatial development of instructional objectives at national, state, district, building, and classroom levels.

3. To understand instructional objectives in a hierarchy representing levels of difficulty of attainment.

4. To be able to write instructional objectives in behavioral terms in consideration of the following:

   a. Categories of objectives, for example, concepts, attitudes, and skills.

   b. Curricular areas, general and specific.

   c. Developmental levels in instruction.

   d. Spatial concerns, that is, the district, the building, and the classroom.

   e. Chronological concerns, that is, the year, the unit, and the daily lesson.

5. To be able to apply instructional objectives as criteria in consideration for adoption of innovative organizational and instructional devices and arrangements.

Participants

Participants in this project were selected through the publication of information concerning the project in school districts in Southern Indiana and the Greater Louisville, Kentucky area. Applications were received and screened in order to select participants who had substantial and successful teaching and/or administrative service in public schools, and who had further a substantial degree of visibility within their respective systems, for the purpose of disseminating the training received from the project. Candidates selected as participants were as follows:

Barbee, Miss Betty M., Counselor
7 Hawthorne Hill, Louisville, Kentucky

Bell, Charles R., Principal
2015 Indiana Avenue, New Albany, Indiana

Branham, Mrs. Viola, Teacher
812 Mechanic Street, Jeffersonville, Indiana

Brown, Mrs. Mary E., Teacher
1835 E. 8th Street, Jeffersonville, Indiana

Bullington, Dan, Principal
435 W. Stansifer, Clarksville, Indiana

Campbell, Robert, Curriculum Director
506 N. Main, Jeffersonville, Indiana

Carrithers, Calvin L., Administrative Assistant
8805 Avondale, Louisville, Kentucky

Caudill, James, Superintendent
Box 37, Pekin, Indiana

Cull, Brooklyn, Curriculum Director
427 E. Main, Madison, Indiana

De Sanctis, Paschal, Principal
4020 Garland Avenue, Louisville, Kentucky

Fischer, Mrs. Thelma, Teacher
1002 W. Highway 131, Clarksville, Indiana

Frazer, Lloyd, Assistant Superintendent
2710 Highway 62, Jeffersonville, Indiana

Gilbert, William, Principal
3844 Monty Drive, New Albany, Indiana

Glass, John M., Principal
1206 Gail Drive, Jeffersonville, Indiana

Higgins, Miss Ruth, Principal
3330 Cornelia, Louisville, Kentucky

Lawson, Mrs. Katie, Teacher
512 E. 9th Street, Jeffersonville, Indiana

Logan, Walter F., Principal
6714 Rest Way, Prospect, Kentucky

McDaniel, Mrs. Helen H., Director of Elementary Education
148 Wildwood Drive, Madison, Indiana

McKee, Miss Josephine, Principal
2326 Gladstone, Louisville, Kentucky

Montgomery, W. L., Principal
201 Robin Lynn, New Albany, Indiana

Peake, Mrs. Lucy S., Teacher
1501 Community Way, Louisville, Kentucky

Rahe, Melvin, Principal
New Albany Public Schools, New Albany, Indiana

Reisz, Miss Lucille, Principal
606 Woodrow Avenue, New Albany, Indiana

Snook, Mrs. Winona, Counselor
1504-A Brigman, Jeffersonville, Indiana

Wells, Mrs. Jane, Reading Coordinator
New Albany Public Schools, New Albany, Indiana

Whelan, Miss Mary Lee, Teacher
801 Foxglove, Jeffersonville, Indiana

Winter, Mrs. Martha M., Social Studies Coordinator
1247 Slate Run Road, New Albany, Indiana

Wortham, Fonrose, Principal
4904 Lea Ann Way, Louisville, Kentucky

Program, Methods, and Materials

Project sessions were conducted over a five-consecutive-day period from June 9 through June 13, 1969. Sessions took place at the Spring Hill Elementary School of the Jeffersonville Community Consolidated Schools, Jeffersonville, Indiana.

The program for the project sessions was as follows:

Monday, June 9

1:00 - 1:30 Registration and coffee hour

1:30 - 2:00 Organization of the workshop
Selection of teams, content assignment to each (reading-listening, speaking-writing, science, math, social studies), selection of team leaders
Distribution of course materials
Texts - Mager - Bloom - Krathwohl - Armstrong
Notebooks and supplies

2:00 - 3:00 Lecture
"Instructional Objectives in a Social Continuum"

3:00 - 3:15 Break

3:15 - 5:30 Use Vimcet Educational Objectives Quiz - Part II, and Instructional Objectives Preference List for pretest purposes

Score and record

- View Vimcet Filmstrip/Tape - "Educational Objectives"
- Questions and discussion following

- View "Educational Objectives" again, using Educational Objectives Answer Sheet

Score and record

5:30 - 6:00 Review of first session activities
Assign completion of Armstrong's programmed text, including tests and goal operations before second session
Goals and application to be developed for subject areas identified with each team

6:00 Adjournment

Tuesday, June 10

1:00 - 1:45 Team sessions to review individual production of objectives in keeping with generalized goals adopted by teams during first session

Selection of one goal and accompanying cognitive, affective, and psycho-motor objectives for presentation to total group

1:45 - 3:00 Presentation of individual team reports to total group. Discussion

3:00 - 3:15 Break

3:15 - 4:15 Lecture - "Educational Objectives in a Spatial Hierarchy"

4:15 - 5:30 Individual programmed study, using Mager text, followed by completion of test at conclusion of text

Score and record

Recording and discussion, emphasizing the component parts of an effective statement of an objective

5:30 Review of second session activities
Distribution of Taxonomy of Educational Objectives: Handbook I and Handbook II, plus list of study questions for study before third session

6:00 Adjournment

Wednesday, June 11

1:00 - 2:00 Team meetings for discussion of Taxonomy and study questions

2:00 - 3:00 Lecture - "Cognitive, Affective, and Psycho-motor Behaviors in Objective-Building"

3:00 - 3:15 Break

3:15 - 4:30 Viewing of Vimcet Filmstrip/Tape on "Selecting Appropriate Educational Objectives"

Use of Answer Sheet while viewing/listening
Recording of scores

Use of Taxonomy Classification Quiz
Recording of scores

4:30 - 5:30 Production of individual statements of objectives for 14 levels in three domains of Taxonomy, content area to be specified in team decision process

5:30 - 6:00 Review of third session activities

Assignment: completion of 14 statements for presentation to colleagues on 1-on-1 basis at beginning of fourth session

Presentation to be in random manner, avoiding semantic clues. Objective: effective statement of objectives for assimilation by another instructor

6:00 Adjournment

Thursday, June 12

1:00 - 2:00 Paired review of individually-produced statements of objectives at 14 levels within three categories
Scoring by number of statements correctly identified as to category and level

2:00 - 3:00 Lecture - "Instructional Objectives and the Structure of Knowledge"

3:00 - 3:15 Break

3:15 - 4:30 Use of Vimcet Filmstrip/Tape - "Establishing Performance Standards"

Use of Answer Sheet
Recording of Scores

Use of Establishing Performance Standards Quiz
Recording of scores

4:30 - 6:00 Assignment and discussion of individual paper to be prepared for fifth session, to include: personal assessment of concepts presented, materials and techniques employed, gains realized; perceived applications of training to own assignment; possibilities for dissemination of training to colleagues-in-service

Review of activities of fourth session

6:00 Adjournment

Friday, June 13

1:00 - 2:00 Review test on defining objectives, distinguishing behavioral from non-behavioral objectives, identifying conditional and qualifying/quantifying factors in objectives, and distinguishing among levels of cognitive, affective, and psycho-motor behavior in statements of objectives

Scoring and discussion

2:00 - 3:00 Lecture - "Instructional Objectives as the Base for Evaluation of Teaching and Learning"

3:00 - 3:15 Break

3:15 - 4:00 Post-training use of Instructional Objectives Performance List

Recording of scores
Discussion

4:00 - 4:45 Team meetings to review individual assessment papers
Selection of individual paper from each team for presentation to total group

4:45 - 5:30 Presentation of individual assessment papers to group
Discussion of each assessment category

5:30 - 6:00 Concluding evaluative and administrative concerns

6:00 Adjournment

Some variance from the formal program was allowed as the activities of each session were carried out.

As seen from the program (above), the methodology consisted of individual, small-group, and total-group activities. Participants were expected to spend time individually in study of instructional materials provided, and in practice in developing instructional objectives in behavioral terms. The small groups were organized around content areas in the elementary school curriculum; the groups engaged in discussion of the literature and of session presentations, and also in the production and evaluation of instructional objectives. The total group engaged in receiving and responding presentations by the small groups and by the Project Director, and in general discussion related thereto.

Instructional materials provided for use by participants in the Project were as follows:

Armstrong, Robert J., et al, Developing and Writing Behavioral Objectives. Tucson, Arizona: Educational Innovators Press, Inc.,

Bloom, Benjamin S., et al, Taxonomy of Educational Objectives, Handbook I: Cognitive Domain. New York: David McKay Co., Inc., 1956.

Krathwohl, David R., et al, Taxonomy of Educational Objectives, Handbook II: Affective Domain. New York: David McKay Co., Inc., 1964.

Mager, Robert, Preparing Instructional Objectives. Palo Alto, California: Fearon Publishers, Inc., 1962.

Popham, W. James and Eva L. Baker, Educational Objectives. Selecting Appropriate Educational Objectives. Establishing Performance Standards. Tape/filmstrip programs. Los Angeles: Vimcet Associates, 1965.

The training provided had a conceptual orientation and also a skill orientation. Conceptually, the place of instructional objectives in the structure of curriculum development was explored, along with the spatial concerns of objective-building--local through national--and with hierarchical levels of activity from the most simple to the most complex. From a skills standpoint, the participants were given the opportunity to build objectives emblematic of those a classroom teacher might use in the improvement of instruction, and, though briefly, to consider the possibilities inherent in their own situations for the meaningful and widespread use of instructional objectives.

Illustrative Production and Evaluation of Objectives

Working in small groups, according to content areas in the elementary curriculum, the participants produced yearly, unit, and daily lesson objectives for study and evaluation by the total group. Some training preceded this activity.

All of the objectives produced in this exercise were determined by the total group to lie within the cognitive domain (Bloom, 1956).

Participants evaluated each statement in two dimensions; first as to the level of cognitive activity expressed (Bloom, 1956); and secondly, on a five-point scale in which ratings indicated as follows:

5 - No doubt in my mind as to what the objective is; what to do and how to evaluate are self-suggestive.

1 - No idea of the goal, how to achieve, or how to measure.

Objectives produced by the participants in this activity are presented as follows, with cognitive level and numerical ratings for each appearing in parentheses:

Yearly Objectives

The student will read and give orally a description of the classifications and subheads of the classified ads in the Louisville Courier Journal and The Jeffersonville Evening News.

(Comprehension - 2)

The pupil will present written evidence of his mastery of writing both friendly and business letters.

(Application - 2)

The pupil will tell (orally or written) how plants produce seeds. He will include the four parts of the plant which contribute to seed production and the variety of ways these seeds are scattered and may grow into new plants.

(Comprehension - 1)

A pupil demonstrates that addition is the joining of sets by correctly combining sets of concrete objects, or semi-abstract objects, or numerals using the appropriate symbols.

(Comprehension - 4)

The student should list in chronological order the major periods in American History.

(Knowledge - 1)

Unit Objectives

After listening to Robert Frosts' poem, "The Death of the Hired Man," will write a description of the characters.

(Analysis - 1)

The student will write a business letter according to a prescribed form.

(Application - 3)

The pupil, using a drawing or a flower, will orally identify, locate, and explain the function of each of the four parts of a flower in the production of a seed.

(Comprehension - 4)

The pupil can demonstrate the union of sets to establish the basic addition facts from 11 through 18 by using concrete objects, semi-abstract objects and numerals.

(Knowledge - 2)

From the following list the student should select five economic factors which instigated the Boston Tea Party.

(Comprehension - 1)

Daily Objectives

After hearing a short poem, the student will verbally repeat the rhyming words.

(Knowledge - 2)

The student will punctuate sample sentences using the period, the question mark, and the exclamation mark.

(Knowledge - 3)

The pupil will dissect a flower and mount and label the four parts.

(Knowledge - 4)

The pupil can establish the addition fact of 8 plus 6 is 14 by using eight pencils and six pens, by using eight red triangles and six blue triangles and by using the set of numerals (8,6,14).

(Knowledge - 4)

The student should locate on a blank map the route and territories covered by the Lewis and Clark Expedition.

(Knowledge - 3)

Summary of the Project

The participants represented a cross-section of elementary school personnel--classroom teachers, content specialists, counselors, principals, district staff, and superintendent-level people. They represented urban, suburban, and rural school systems. All had substantial professional experience; some much more than others.

The Project sessions took place during a week between the end of the spring semester and the beginning of various types of summer professional activity. Many of the participants were still on duty during the period, but were released for the scheduled session times.

Attendance and participation were uniformly excellent. Despite generally hot weather and the press of other responsibilities, the participants entered willingly and with vigor into the activities of the project. All were conscientious about the completion of the several assignments given to be completed outside formal Project hours. Empathy within the group was quickly and consistently observable, despite the fact that a number of school districts in two states were represented.

The program was designed around the specified outcomes expected (see above). The first three items, dealing with the place of instructional objectives in the structure of curriculum development, spatial development of objectives from local to national levels, and the hierarchical nature of objectives, were the subjects of specific presentations, readings, and discussions. The content was covered briefly but with reasonable thoroughness.

The fourth item, concerned with the writing of behavioral objectives, was the object of substantial explanation, discussion, practice, and evaluation, samples of which appear above. While categories or domains of objectives were identified, however, the actual production of objectives in training was limited rather completely to the cognitive domain. Further, the problems of distinguishing cognitive levels and semantic difficulties in expressing objectives resulted in the bulk of objectives produced in training being identifiable at primarily the less complex levels of cognitive activity. Very little was produced which, according to Bloom (1956) could be located at the levels of analysis, synthesis, or evaluation. This was true despite the fact that these were experienced professionals all of whom occupied leadership roles of one type or another. They readily recognized and were frank to admit the problems encountered in this regard.

The fifth item, dealing with the application of instructional objectives in innovative arrangements, received only surface attention. Concerns of the participants rather tended to focus on: (1) extending their own knowledge and experience in the art of producing valid instructional objectives, and (2) sharing the experiences of the Project with their colleagues who had also expressed interest in learning to write objectives behaviorally. The newness of the approach presented, to say nothing of its complexity in terms of concepts and skills, made prohibitive any substantial effort toward application during the brief training period. This is not to imply, however, that the participants completed the training project in a state of discouragement over the usefulness of the

training or possibilities for applying mastery of the skills of developing appropriate instructional objectives in instructional innovation and redesign. Quite the reverse was true, as will be illustrated in the selected comments of participants which follow.

Evaluative Comments of Participants

From many comments received from participants in the Project at the time of their evaluation of the training received, the following have been selected as representative:

"The materials and concepts were fun to work with in that there was, for one thing, no real comparative analysis made of each other, but only with each other in a manner that we could see ourselves developing a little better sophistically." (Bullington)

"Now the light has come on suddenly and bright. We finally have a way to communicate with each other the desired goals for our instructional program and have some behavioral goals and objectives by which these programs can be evaluated in a reliable manner." (Branham)

"You needn't worry about my colleagues hearing about what has been learned in this workshop - several fellow staff members have asked me, most sincerely, to "take good notes, I want to know what you learned." (Snook)

"Stating educational objectives in behavioral terms is the clearest, most efficient way for the teacher and the student to know where they are going, how they are going to get there, and to what degree they have accomplished the work they set out to do." (Barbee)

"The texts which we were given will provide me with excellent resource and reference material as I continue my study of instructional objectives in behavioral terms. I have not comprehended all I have read; I cannot verbalize, to my own satisfaction, that which I understand vaguely; and above all, I need more time to study and re-think the text book materials which we have used." (McKee)

"It was difficult to write a high level behavioral objective. Since vocabulary is so important it will take more practice and time. Thinking needs to be changed. Our class found that words need more precise meaning to refine thought and clarify the objective." (Reisz)

"According to ideas presented in our class, the educational objectives stated in our handbook certainly leave much to be desired. Since our third reorganization has occurred during the past three years, a complete overhaul of our handbook and especially our educational objective is in order." (Frazer)

"My own assignment with the Jefferson County Schools is that of administrative problems dealing with student problems and complaints from the community. I can definitely see a correlation of student problems to

student behavior in a given classroom. We as educators, must formulate in our own minds what student behavior instructional programs should produce and until that time our subjective evaluation is bordering reporting of invalid information." (Carrithers)

"My experiences during this past week have convinced me that in order for the classroom teacher to do an adequate job of instruction, specific daily and unit objectives must be developed and written down in terms that are understandable not only to the students of her class but to others who might be concerned." (Caudill)

"Beginning next Monday, I have arranged with Purdue University to offer in New Albany an eight week seminar in guidelines for curriculum planning. A month ago I would have jotted down a pointless list of objectives as a part of the traditional pattern of curriculum guides; I would not have expected them to be of any help in designing a course." (Winter)

"Each year my first responsibility in September is to work with newly employed teachers, and from the insight gained in this course, I feel much better prepared to explain New Albany's educational objectives regarding reading in practical, measurable terms." (Wells)

"As the faculty plans, rewrites and analyzes curriculum to meet local needs it will be imperative for me to inject my findings about instructional objectives into their thinking and planning and help them become aware of this need." (Wortham)

"The class as a whole 'jumped in with both feet' and profited by doing so." (Gilbert)

As to applying this training to my assignment as Director of Elementary Education for the Madison Consolidated Schools, Madison, Indiana, I am already using it to help me evaluate our curricula and the goals we have outlined in our guides. The result of this will be the re-writing of these guides by teachers whom I will acquaint with the materials (texts and filmstrips and tapes) used in the workshop." (McDaniel)

"In view of their importance, the purposes of daily, yearly, and unit objectives, as I understand them are: (1) to serve as guides in the selection of essential and desirable subject matter, (2) to serve as guides in the selection of essential and desirable student activities, (3) to serve as guides in the selection of the method of teaching and teaching devices to be used, (4) to serve as guides in measuring the effectiveness of the learning and teaching activities, and (5) to serve as guides in the attainment of the aims of a course and of education in general." (Logan)

Conclusions

The conclusions which follow are offered as reflective of the Director's evaluation of the experiences of the Project. The list should not be considered as a complete expression, but rather as one singling out briefly some items of moment, for such value as these may have for the reader.

1. Instructional leaders are genuinely concerned about what they feel to be inadequately drawn objectives for instruction. They are not jaded; on the contrary, they are open and receptive to the opportunity to develop new and personal understandings and skills in this regard, and to share them with their fellows.

2. As indicated by the difficulty experienced in producing instructional objectives at the more complex levels of cognitive activity, teachers are not, at present, operating well at all at these levels. Further, the affective domain goes largely unrecognized structurally in any operational sense. If true for experienced and interested instructional leaders, how much more true for teachers in general?

3. Current work in instructional objectives tends to over-emphasize the necessity of specifying some form of short-term change in overt behavior. This leads to a focus on less complex cognitive activity and blunts development of viable instructional objectives in the affective domain.

4. Valid instructional objectives are inextricably intertwined with the selection of appropriate content, methods, materials, and assessment techniques. Unless viewed within the total context of curriculum design, the mastery of concepts and skills prerequisite to the production of valid instructional objectives is wasteful of time and meaningless.

5. Short-term training such as undertaken in this project can do little more than open the door of understanding and skill development in the preparation and use of instructional objectives for participants. This does not mean that the approach taken was invalid. It does mean that this kind of sophistication cannot be hurried; that much depends upon the continued commitment, study, and practice of the individual participant, and upon the constraints under which he finds value in continuing his development in this area.